ISSN: P-2455-0515
E- 2394-8450

Educreator Research Journal

VOLUME–IX, ISSUE– III

MAY – JUNE 2022

Original Research Article

SPATIO-TEMPORAL ANALYSIS OF AURANGABAD DISTRICT RAINFALL

Dr. Ramesh Trimbakrao Mahalkar

Geography, Department, Shri Asaramji Bhandwaldar Art Commerce & Science College, Deogaon

Abstract:

Rainfall is the important element of Aurangabad district economy. Especially rainfall effect on agricultural we can't ignore because there is having strong relation between rainfall and agricultural. Rainfall is the primary ecological parameter has created a variety of farmingenterprises, types or" systems in the world. It is the single dominant weather elements influencing the intensity and location of farming system and farmers choice of enterprises In Aurangabad every year crop selection problem comes due to irregular's pattern of rainfall. Due to their variation in temporal distribution of rainfall their farmer can't understand what todo, hence there is need to deep scientific rainfall study requires overcoming this problem. There is great temporal variation in the distribution of rainfall. Most of the annual rainfall is received in the four rainy months of June to September. The average annual rainfall is about 736 mm, but it has great temporal variations. It is difficult to define its correct spatial and temporal pattern of rainfall distribution. This study focuses on spatial and temporal distribution of rainfall in Aurangabad district. Aurangabad is one of the drought district of Marathwada regions of Maharashtra state. This study since 1966 annual rainfall has beenconsidered. Some statistical method and computer tools are applied to get desire output as well as Google Earth, Global Mapper and Arc GIS software are used for mapping.

All over this study shows that in Aurangabad district spatial rainfall distribution does not having maximum variation. But there are having maximum temporal variation in rainfall distribution. All over Aurangabad district get quite good rainfall compare to dry region only there is need to proper water management. Every one consider annual average rainfall for planning and diction even government planner but it does not represent real situation of the Aurangabad district rainfall. This thing we have to rectify using other method.

Key Words: *Rainfall analysis, Water resource*

Introduction:

Rainfall is the important element in the economy of Aurangabad district. Especially rainfall is controlling the agricultural therefore we can't ignore it, in other words there is a strong relationship between rainfall and agricultural. Every year the farmers in Aurangabad district are facing problem of proper crop selection due to irregular pattern of rainfall.

The farmer is confused due to the variation in temporal distribution of rainfall. Hence it is essential to conduct a deep scientific study of rainfall to deal this sever problem. There is great temporal variation in the distribution of rainfall. Most of the annual rainfall is received in the four rainy months of June to September. The average annual rainfall is about 718 mm, but containing great temporal variations. Normally it is difficult to define

ISSN: P-2455-0515
E- 2394-8450

Educreator Research Journal

VOLUME–IX, ISSUE– III

MAY – JUNE 2022

Original Research Article

correct spatial and temporal pattern of rainfall distribution, because rainfall is natural and unpredictable phenomena. This study focuses on spatial and temporal distribution of rainfall in Aurangabad district. Aurangabad is one of the drought prone districts in Marathwada regions of Maharashtra state.

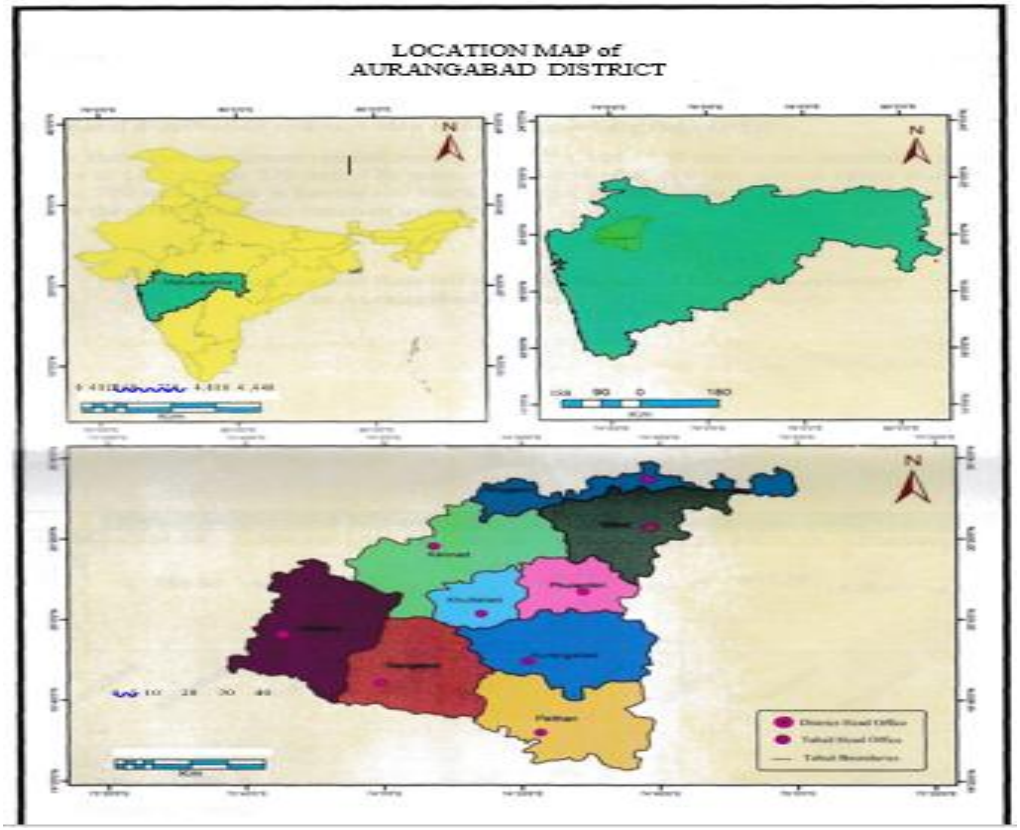
Study Area:

Aurangabad is one of the district of Maharashtra states. District covers an area of 10100sq.km. Out of which 141.1sq.km. is urban area and 9.958sq.km. Aurangabad district is approximately situated at the central part of the Maharashtra republic of India and northern direction of marathwada region. Especially district lies between 19°53'47" North latitude and 75°23'54" East longitude. District has a great historical as well as cultural heritage. According to 2001 census total population of district is 36,95,928 and population density is 365sq.km. Aurangabad, Kannad, Paithan, Phulambri, Khultabad, Gangapur, Vaijapur, Sillod, Soygaon.

Assumption : All collected rainfall data through government climate station is correct and authentic

Limitation :

in this study only annual rainfall data has been consider to get desire output so its temporal accuracy is limited and some taluka's before 1998 rainfall data is not available hence these taluka average rainfall is calculate for only 16 year data.



1) To study rainfall characteristics in Aurangabad district .

ISSN: P-2455-0515
E- 2394-8450

Educreator Research Journal

VOLUME–IX, ISSUE– III

OPEN ACCESS

MAY – JUNE 2022

Original Research Article

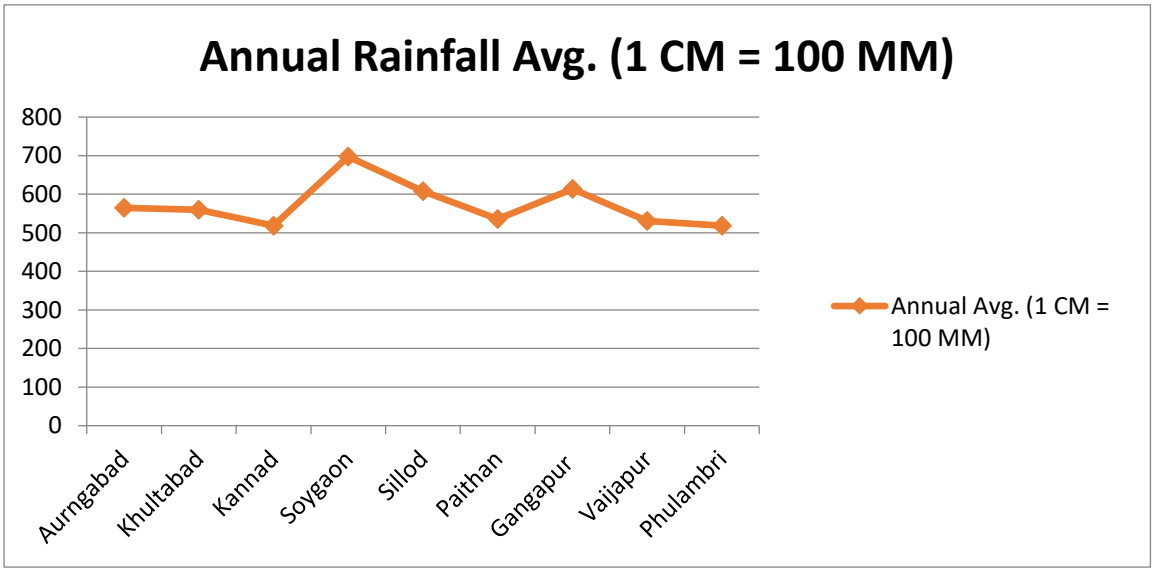
2) Find out temporal variation in rainfall distribution

Method - For this study annual rainfall data from 1991 to 2010 is utilized. Some statistical method and computer tools are applied to get desire output. Also use of Google Earth, GlobalMapper and Arc GIS software are made in this study for mapping and analysis purpose.

Temporal distribution and variation of Aurangabad district rainfall —

Study show that maximum rainfall occurs in 1983 it was 1305 mm in and minimum rainfall occurs in 1972 it was 329 mm. The normal annual rainfall over the district varies from 500 mm to 700 mm .There is having too much variation in every year rainfall. Following graph shows the distribution and variation in rainfall.

Table- 1 Mean Annual Rainfall and Co-efficient of Rainfall Variabilityin Aurangabad District (1991-2010)



Above table shows rainfall distributions as well as Co-efficient of rainfall variability in Aurangabad district (1991-2010). Highest average annual rainfall distribution has been seen in Soygaon tahsil and lowest annual rainfall distribution noticed in Kannad tahsil (518.52). whereas Co-efficient of variation values have been analyze in following manner

Kannad 39.30,Phulambri 39.30,Vaijapur 37.12,Paithan 36.92, Khultabad 34.80,Aurangabad 34.20 ,Sillod 32.10, Soegaon 28.19 hence in Aurangabad district annual average rainfall doesnot give idea of rainfall situation.

Conclusion & Recommendations:

All over this study shows that in Aurangabad district spatial rainfall distribution does not having maximum variation. But there are having maximum temporal variation in rainfall distribution. Their average annual rainfall does not represent clear idea about rainfall. Aurangabad district get quite good rainfall compare to dry region only there is need proper water management for agriculture sustainable development.

Reference:

Shrikant Karlekar and Kate Mohan (2006)," Statistical Analysis of geographicaldata",dimond Pub1.Pune.

ISSN: P-2455-0515
E- 2394-8450

Educreator Research Journal

VOLUME–IX, ISSUE– III

OPEN ACCESS

MAY – JUNE 2022

Original Research Article

A.E. Sonwane, Dr. Jotiram AJore and Nayana Kulkarni (2011), "Analysis of the rainfall pattern in shirur tahsil, District Pune, Western Maharastra", Paper presented at the national conference on Research Methodology in geography, Udgir, Aurangabad, 15-17-feb.

Gooaerts P (2000): "Geostatistical approaches for incorporating elevation into the interpolation of rainfall", J. Hydrology pp, 113-129.

http://Aurangabad.nic.in

Cite This Article:

Dr. Ramesh Trimbakrao Mahalkar, (2022). *Spatio-Temporal Analysis of Aurangabad District Rainfall,* ***Educreator Research Journal, Volume–IX, Issue– III, May – June 2022,*** *234-237.*